

## **TRAINING ON DOCUMENTATION IN ARCHITECTURAL HERITAGE: THE EXPERIENCE OF ARIS AND CLADIC COURSES**

A. Almagro Vidal\*, A. Almagro\*\*

\* ARIS Course Coordinator - ICCROM – Via di San Michele, 13 – 00153 Rome, ITALY - [anaalmagro@arquired.es](mailto:anaalmagro@arquired.es)

\*\* Director - Escuela de Estudios Árabes, CSIC – Cuesta del Chapiz, 22 – 18010 Granada, SPAIN - [aalmagro@cica.es](mailto:aalmagro@cica.es)

**KEY WORDS:** training, recording, architectural heritage, conservation, co-operation, ICCROM

### **ABSTRACT**

Following the idea that “better than to give a fish to someone who is hungry is to train him how to fish by himself”, ICCROM [International Centre for the Study of the Preservation and Conservation of Cultural Property] has promoted the International Advanced Course titled “Architectural Records, Inventories and Information Systems for Conservation” that was held in Rome during 2003 and has had a second edition in collaboration with The Getty Conservation Institute in 2005. Following the experience of ARIS Course, the Instituto del Patrimonio Histórico Español in collaboration with the Escuela de Estudios Árabes of Granada promoted a similar course named CLADIC addressed to Latin-American professionals engaged with the conservation and documentation issues in their countries. These courses are mainly based on the use of accessible tools of low cost and simple handle and have permitted by now the training of almost 40 people from over 30 different countries for recording cultural heritage and the increase of their awareness on the importance and necessity of cultural heritage documentation processes to be promoted from their own institutions worldwide. In these courses several persons related to CIPA have been involved.

### **1. INTRODUCTION**

The first conservation levels are associated with knowledge and this knowledge entails documentation as a fundamental aspect for preserving cultural heritage. Architectural records, the recording process, and information management in the field of conservation are continuously developing and must be considered in a broader context and as a fundamental part of a large body of knowledge and disciplines converging to safeguard heritage.

In that context, and prior to any conservation measures, cultural heritage must be documented, analysed and viewed as the result of its evolution and history. The conservation of cultural heritage entails a consideration of the material as well as the immaterial aspects of heritage. The physical aspects of architectural heritage, and its symbolic meanings in historical, cultural, and social contexts make up the cultural memory and legacy left to future generations at local, regional and national level. It is therefore necessary to consider documentation as a moral, social and educational issue and to approach architectural recording, documentation, and information management from a wider standpoint than the merely material aspect.

There are many examples of wonderful recording works carried out by skilled scientific institutions co-operating with developing countries or inexperienced institutions, but using expensive and sophisticated tools that in so many cases are unavailable to such countries. Thus, this situation does not solve the problem from the basis, as it is often the case that the documentation produced is usually not available for local conservation works or it is too complicated to be managed, which turns it into useless and inaccessible information.

In this regard, the key element should be to involve local professionals engaged in the field of recording and to train them in the whole process of documentation, including concepts, guidelines, recording practice and information management with simple, easy and low/medium-cost systems. Training these professionals might be the first step to enable their institutions to implement and enhance recording practice in order to produce good information useful within the conservation process.

### **2. ARIS & CLADIC Courses**

Following one of its statutory functions, ICCROM [International Centre for the Study of the Preservation and Restoration of Cultural Property] aims at the improvement of conservation practice quality. Since 1967, this intergovernmental organization promotes, develops and provides training in the field of conservation. Over 3,500 professionals coming from 164 countries of the world have been trained at ICCROM by over 400 experts in the field of conservation of cultural property.

In this context, in 2003 ICCROM held an International Advanced Course in architectural conservation, heritage recording, and information management entitled “Architectural Records, Documentation, Inventories and Information Systems for Conservation” [ARIS]. The success of this first experience was followed by a second edition in 2005, sponsored and planned in collaboration with The Getty Conservation Institute. In the same way, during 2004, following the experience of ARIS03, the Instituto del Patrimonio Histórico Español in collaboration with the Escuela de Estudios Árabes of Granada (belonging to the Spanish Council for Scientific Research) promoted a similar course entitled “Curso de Levantamiento Arquitectónico, Documentación e Inventarios para la Conservación” [CLADIC] addressed to Latin-American professionals engaged in the field of documentation and conservation in their own countries.

It is worth mentioning that these three courses have already permitted the training of almost 40 architectural conservation professionals from 31 countries (Fig. 1) with different backgrounds such as architects, engineers, planners, conservators, archaeologists, historians, surveyors, managers, and other conservation professionals involved in the field of recording, documentation and information management. Furthermore, the initiative has allowed the creation of a platform for fostering discussion, development, and advancement of the discipline of documentation worldwide that aims at a better preservation of cultural heritage.

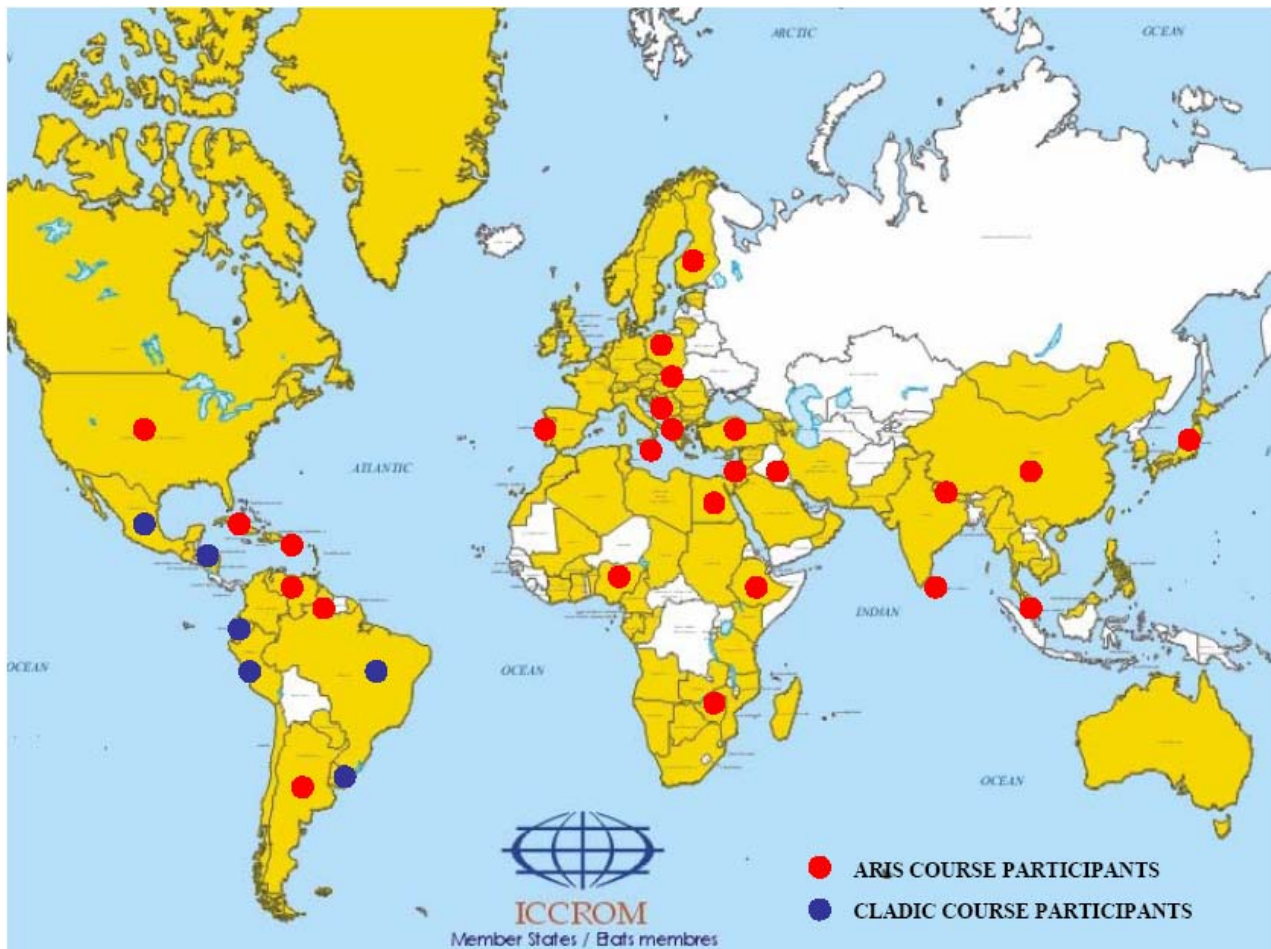


Figure 1. Geographical distribution of ARIS & Cladic courses participants

### 3. COURSE EDUCATIONAL OBJECTIVES

The main objective of these courses was to stress the importance of producing good information as a means to understand the structures, the history, significance, past interventions and the current conditions of architectural heritage. This approach, based on a deep knowledge of all the values provided by cultural resources, are the key for good conservation decisions. This leads to the logical conclusion that documentation must, or at least should, be produced by the professionals directly involved in the conservation process, who will have to use this knowledge to deal with the responsibility of the conservation and restoration practice.

To this purpose, the course addressed the needs, methodology, and a wide variety of tools and techniques for acquiring and using this knowledge focusing the different topics on a general course case study: the area of the Church of Santa Cecilia in Trastevere in Rome, in ARIS courses (Fig. 2), and the Carthusian monastery of Granada in CLADIC course (Fig. 3). In addition, the course promoted a multidisciplinary approach and the creation of working teams to increase interaction among participants as well as between them and the instructors.

Ultimately, the long term strategy is to enable course participants to transmit documentation knowledge, attitudes and skills when back to their own countries, by local training activities and through good documentation and conservation practice. But, over and above all, the aim is to enlarge their awareness about the importance and necessity of appropriate cultural heritage documentation processes to be promoted and carried out from their own institutions.

### 4. COURSE STRUCTURE

In order to reach the mentioned objectives ARIS and CLADIC courses were structured around three main blocks of knowledge on specific matters relating to:

#### 4.1 Documentation

This part is based on a general review of the history of architectural documentation and recording technology, as well as notions and principles for good documentation, and international guidelines for architectural recording.

#### 4.2 Recording practice

The contents of this block were firstly exposed and then followed by practice based on field data collection from the course case study. Topics included:

##### 4.2.1

Understanding the wide variety of tools that permit to integrate equipment of low/medium/high cost in different situations to produce good information.

##### 4.2.2

Understanding that the context must be recorded as well as the subject to fully understand the case study.

##### 4.2.3

Pointing out the importance of selecting a documentation method and specific tools based on identified conservation



needs following the principles of appropriateness, suitability, effectiveness and efficiency.

#### **4.2.4**

Expanding the scope of recording beyond the case study to the urban surroundings and conservation practices at large.

#### **4.2.5**

Understanding how data turns into information and the integration of information into the conservation process.

### **4.3 Information management**

During the whole process data management and information structure were focused from the point of view of planning, practice, access and dissemination.



Figure 2. The area of Santa Cecilia in Trastevere in Rome, next to ICCROM headquarters



Figure 3. The Sacristy of the Carthusian monastery of Granada

## **5. THE RECORDING PROCESS**

The recording practice was taught by leading experts in the field, most of them related to CIPA, such as Antonio Almagro from Spain, and Steve Nickerson and Robin Letellier from Canada. The training experience was based in a specific case study where participants had to deal with issues related to tools, the field practice moved up in the scale to more sophisticated equipment, always taking into consideration a balanced relationship between quality, required time and effective costs.

A demonstration of 3D laser scanner principles was carried out but, however, in these courses this technique was not considered as an available tool due to the high cost of the equipment in relation to the real effectiveness of data collected for the conservation process. This fact reduces enormously the possibilities of access to this technique in a large number of countries and, of course, the expertise of local professionals.

### **5.1 Data Collection**

Field exercises were organized in teams of two participants, in order to collect data using different techniques such as direct measurements with hand tape and laser distometer, topography (Fig. 4), and photography aimed to photographic rectification and photogrammetry. A GPS survey was carried out to demonstrate advantages and limitations of this tool in terms of accuracy, cost and real requirements of the project.



Fig. 4. Field exercise on topography



Fig. 5. The ARIS05 recording laboratory

### **5.2 Photographic rectification**

Principles of this technique that provides rectified metric images in a short time, were introduced and practice was carried out using the software called ASRix developed by Steve Nickerson (Fig. 6). The data required to get this kind of record was provided by control points from the topographic survey or direct measurements. The final result was a comprehensive rectified-image 3D model of the project area in CAD that gathered the different parts produced by each team (Fig. 7 & 8). Camera calibration was introduced as part of the practical exercise to aware participants of the importance of correcting distortion in



digital cameras. For this purpose, ASRix includes an easy process that permits to calibrate any camera giving the internal parameters to correct distortion.

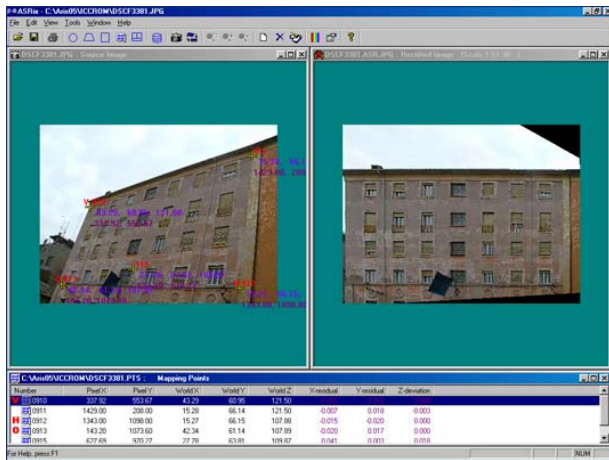


Figure 6. ASRix rectifier interface

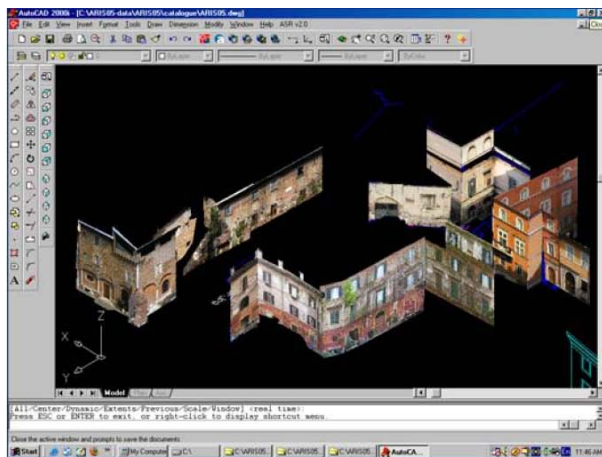


Figure 7. View of the 3D Urban model of Piazza dei Mercanti



Figure 8. Recording laboratory activity. Integration of data

### 5.3 Stereophotogrammetry

After a brief introduction to the general principles of photogrammetry the practical exercise consisted on understanding the concepts of internal, relative and absolute orientation. Participants spent some time getting used to stereo view through a stereoscope and to control the floating mark in the space (Fig. 9). Using Video Stereo Digitizer [VSD], a simple software developed by Prof. J. Jachimsky from the university of Krakow, participants acquired some practice in stereo-plotting, understanding the amount of time needed to get a good plotted drawing. Some results can be seen in the attached figures (Fig. 10 & 11)



Fig. 9. Stereoplotting process with VSD



Fig. 10. Graphic interface of VSD. Stereopairs, control points and plotting are visualized



Fig. 11. Data transfer from VSD to AutoCAD

## 5.4 Data Management

One of the most relevant aspects of the recording process is that of providing data structure and internal organization to it, in order to facilitate future retrieval and access. This issue was faced for the first time as a course objective in ARIS05, mainly related to manage data produced during the course. Thus, once collected, and prior to any further activity, data was catalogued using a simple system called ASCix provided by Steve Nickerson (Fig. 12). The aim of this process was to identify data according to the author, date, and topic.



Figure 12. Cataloger ASCix used to manage ARIS05 course data

The course laboratory practice and the final evaluation demonstrated that this issue requires improvement, as it is considered of very high relevance in the documentation process. In our opinion, the failure of this objective was due to lack of method, structure, guidelines, and communication, aspects that cannot be solved just by using specific software. In addition, there was no enforcement or selection of content for the information, resulting in a huge data set in which good and bad data were mixed. These are usual problems that recording professionals face in their daily work.

In the field of data management another topic that was mentioned at an introductory level was that a Geographic Information System (Fig. 13). It was presented as a computer-based system design to manage, retrieve, display, and analyze complex data and a valuable application in preparing management plans for cultural heritage sites, as well as a potential resource for decision-making.



Figure 13. GIS demo on the area of Santa Cecilia in Trastevere

## 5.5 Dissemination

Documentation without dissemination is useless. If the information produced cannot be communicated, all effort is wasted. Thus, a special session was dedicated to understanding the principles and tools for dissemination, the importance of selecting means of dissemination and its appropriateness as well as identifying and addressing the audience in order to transmit information for a better understanding of cultural resources.

## 6. CONCLUSIONS

To summarize, these courses demonstrate and emphasize the need for co-operation between various organizational levels in order to better enhance conservation practice across the world: ICCROM, as an intergovernmental organization with its wide reach, the Getty Conservation Institute, as a private institution involved in international conservation activities, and the *Instituto del Patrimonio Histórico Español* and the *Escuela de Estudios Árabes-CSIC*, as public national institutions in charge of recording and safeguarding cultural property at national level.

Complementing each other and from their respective scopes, these institutions are promoting and carrying out sustainable strategies for good documentation and conservation practice, involving and training local professionals worldwide with practical and low cost tools, and easily accessible expertise.

The hope is that from these initiatives further activities will be promoted in other countries to spread the necessity of enhancing local documentation projects. This is because providing training in the field of documentation in countries worldwide means to promote the first steps for the preservation of cultural property.

The quantity of world heritage to be recorded is huge. Quoting François Le Blanc, Head Field Projects of the GCI in the ARIS05 Opening Ceremony “*we are losing our heritage at a rate that is faster than we can record it...*”. Despite our attempts to co-operate from specialized centres in punctual actions, we will never be able to solve the problem. The only way to do so is through long term actions promoting local experts’ training in order to achieve that each country can deal with the solution of its own problems, training and having the national skilled personnel at disposal to do it. And this is certainly an objective that CIPA should deal with as a priority.